

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
Expanding Flexible Use of the 3.7)	GN Docket No. 18-122
to 4.2 GHz Band)	
)	

COMMENTS OF UNITED STATES CELLULAR CORPORATION

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United States Cellular Corporation (“USCC”) submits these comments in response to the Public Notice released by the Commission on July 19, 2019 in the above-captioned proceeding.¹ USCC applauds the Commission for its continued work to make spectrum in the 3.7-4.2 GHz band (the “C-band”) available for next generation wireless services. USCC’s ongoing focus in this proceeding is to work with the Commission and other stakeholders to formulate an approach that will maximize the amount of C-band spectrum repurposed for terrestrial mobile and fixed operations (the Mid-Band Flexible Use or “MBX” spectrum) and ensure service providers of all sizes have a reasonable opportunity to acquire flexible use licenses for this crucially important mid-band spectrum. As detailed herein, USCC believes that the best way to accomplish this goal involves transitioning certain incumbent C-band users to terrestrial fiber networks, repacking the remaining incumbent users in to only a portion of the current C-band spectrum, and then offering reasonably-sized – in terms of both bandwidth and geographic area – terrestrial flexible use licenses for the MBX spectrum via a traditional, Commission-run auction.

¹ See *Wireless Telecommunications Bureau, International Bureau, Office of Engineering and Technology, and Office of Economics and Analytics Seek Focused Additional Comment in 3.7-4.2 GHz Band Proceeding*, Public Notice, GN Docket No. 18-122, RM-11791, RM-11778, DA 19-678 (rel. July 19, 2019) (“Public Notice”). All Comments cited herein were filed in GN Docket No. 18-122.

I. INTRODUCTION & SUMMARY

Wireless service providers require a sufficient quantity of low-, mid-, and high-band spectrum in order to deploy next generation wireless networks. Relevant here, mid-band spectrum is “well-suited for next generation wireless broadband services due to the combination of favorable propagation characteristics (compared to high bands) and the opportunity for additional channel re-use (as compared to low bands).”² While the Commission has done a laudable job making available both the low- and high-band spectrum that wireless service providers require to deploy next generation networks, the C-band currently is the only mid-band spectrum in the Commission’s pipeline that is potentially: (1) available on a near-nationwide basis; (2) suitable for exclusive-use, licensed services; and (3) has a sufficient amount of spectrum to allow multiple bidders to win enough spectrum to support larger channel bandwidths for macro 5G operations. This proceeding therefore provides a crucial opportunity to make much-needed mid-band spectrum available for next generation wireless services.

Given the significant importance of the C-band to next generation wireless services and the wireless industry generally, as well as the importance of each bidder acquiring sufficient bandwidth, USCC urges the Commission to repurpose as much C-band spectrum as possible by relying on its broad license modification authority under Section 316 of the Communications Act to repack incumbent C-band users into the upper segment of the band or to transition incumbents users to other means of distribution. The Commission then should make available terrestrial flexible use licenses for the repurposed C-band spectrum in a standard ascending clock auction run by the Commission. USCC also urges the Commission to adopt a band plan and licensing

² *Expanding Flexible Use of the 3.7 to 4.2 GHz Band*, Notice of Proposed Rulemaking, 33 FCC Rcd 6915, 6917 (2018) (“*C-Band NPRM*”).

rules for the repurposed spectrum that ensure small and regional carriers have a reasonable opportunity to acquire these licenses and to use this spectrum to provide next generation wireless services to the rural areas these carriers typically serve. Notably, access to sufficient mid-band spectrum will be particularly important to these carriers and their customers because mid-band spectrum's "balance of coverage and capacity could provide a critical input to operators to deploy new and improved wireless services to rural, remote, and underserved areas of the country."³ USCC specifically urges the Commission to adopt an MBX band plan consisting of aggregable 10 megahertz blocks, to license the MBX spectrum on the basis of Partial Economic Areas, and to prohibit a single entity from acquiring more than one-third of the initial flexible use licenses made available for the MBX spectrum in a given license area.

II. THE COMMISSION SHOULD USE ITS BROAD SECTION 316 AUTHORITY TO CLEAR A LARGE SWATH OF THE C-BAND, AND THEN CONDUCT AN AUCTION OF FLEXIBLE USE LICENSES FOR THE CLEARED SPECTRUM

The equal, nonexclusive rights of incumbent Fixed Satellite Service ("FSS") licensees to the entire C-band significantly complicate repurposing a segment of this band for terrestrial flexible use operations. Although various stakeholders have proposed a number of innovative reallocation mechanisms designed to address the C-band's unique licensing structure, there have been significant legal, equitable, practical, and other issues with all of these proposals that prohibit their adoption by the Commission, or that at least weigh heavily against their use, especially given the critical importance of C-band spectrum to next generation wireless services.

Fortunately, ACA Connects – America's Communications Association ("ACA Connects"), the Competitive Carriers Association ("CCA"), and Charter Communications, Inc.

³ *Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*, Notice of Inquiry, 32 FCC Rcd 6373, 6375 (2017).

(“Charter”) (collectively, the “ACA Connects Coalition”) recently filed a joint proposal that has significant potential to successfully overcome the issues related to the C-band’s licensing structure while repurposing a significant amount of spectrum for terrestrial flexible use services. For the reasons discussed below, USCC believes the Commission should implement this proposal by relying on its statutory authority to modify the authorizations of incumbent C-band space station and earth station licensees and registrants in order to restrict their operations to the upper portion of the band, and then conduct a standard ascending clock auction of flexible use licenses for the C-band spectrum cleared of FSS operations as a result of such modifications.

Notably, the ACA Connects Coalition proposal “marks the first time that incumbents and prospective new licensees have come together on an industry-designed plan for repurposing the C-band...”⁴ Under this proposal, the repurposing of C-band spectrum would involve a two-step process. “First, video programmers and MVPDs would transition video programming backhaul from C-band delivery to terrestrial fiber video delivery.”⁵ As Charter explained, transitioning these operations to fiber-based delivery “will help maximize the amount of C-Band spectrum that can be repurposed and facilitate a speedier deployment of new services in the C-Band.”⁶ After a market completes this transition to fiber, the spectrum would be available to the new flexible use licensees in that market.⁷ In addition, “simultaneous with the MVPD industry transition, satellite operators would repack services used by non-MVPD earth station users to the

⁴ Comments of ACA Connects – America’s Communications Association, pp. 1-2 (July 3, 2019) (“ACA Connects July 2019 Comments”).

⁵ Letter from Ross Lieberman, Senior Vice President, Government Affairs, ACA Connects – America’s Communications Association, Alexi Maltas, Senior Vice President & General Counsel, Competitive Carriers Association, and Elizabeth Andron, Senior Vice President, Regulatory Affairs, Charter Communications, Inc., to Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122, p. 4 (July 2, 2019) (“ACA Connects Coalition Ex Parte”).

⁶ Comments of Charter Communications, Inc., p. 9 (July 3, 2019) (“Charter July 2019 Comments”).

⁷ See ACA Connects Coalition Ex Parte at 4.

upper portion of the C-band.”⁸ The ACA Connects Coalition further proposes “that the reformed spectrum be made available for flexible terrestrial wireless use through an FCC-led auction.”⁹

A. The ACA Connects Coalition Proposal Would Advance the Public Interest

As members of the ACA Connects Coalition have detailed in recent filings, their proposed approach would produce various public interest benefits. Perhaps most importantly, their proposal would “[a]lmost double the amount of spectrum reallocated for 5G services”¹⁰ compared to several previously-filed proposals, such as those filed by the C-Band Alliance (“CBA”) and the Wireless Internet Service Providers Association (“WISPA”), Google, and Microsoft. Specifically, the ACA Connects Coalition’s proposed approach would “refarm for terrestrial wireless use a minimum of 370 megahertz,”¹¹ while both CBA and WISPA/Google/Microsoft propose to repurpose only 200 megahertz of C-band spectrum¹² – a clearing target deemed wholly insufficient by an overwhelming majority of interested parties.¹³

⁸ *See id.* at 4.

⁹ *Id.* at 2.

¹⁰ *Id.*

¹¹ *Id.* at 3.

¹² *See* Comments of the C-Band Alliance, p. 10 (Oct. 29, 2018); Letter from Claude Aiken, President & CEO, Wireless Internet Service Providers Association, Andrew Clegg, Spectrum Engineering Lead, Google LLC, and Michael Daum, Technology Policy Strategist, Regulatory Affairs, Microsoft Corp., to Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122 (July 15, 2019).

¹³ *See, e.g.,* Reply Comments of Competitive Carriers Association, p. 4 (Dec. 11, 2018) (“CCA NPRM Reply Comments”) (“200 megahertz is insufficient to ensure America’s leadership position in the race to 5G.”); Comments of Verizon, pp. 9-10 (Oct. 29, 2018) (“[T]he Commission should require an Initial Minimum Spectrum Benchmark greater than the C-Band Alliance’s recent proposal of 200 megahertz.”); Comments of Nokia, p. 7 (Oct. 29, 2018) (“Nokia NPRM Comments”) (“The public interest demands that the Commission require a plan and path forward for clearing additional spectrum in the band over and above the recently proposed 200 MHz.”); Letter from Mark Racek, Sr. Director, Spectrum Policy, Public Affairs and Regulations, Ericsson, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122, p. 1 (Apr. 26, 2019) (“Ericsson Ex Parte”) (“[T]he CBA approach does not make nearly enough mid-band spectrum available for 5G...”; Comments of T-Mobile USA, Inc., p. 1 (Oct. 29, 2018) (“T-Mobile NPRM Comments”) (emphasizing that CBA’s proposal “falls significantly short of what terrestrial operators need to deploy 5G broadband operations in the spectrum”).

Given the critical importance of mid-band spectrum generally, and of the C-band specifically, to the deployment of 5G services, the amount of spectrum that would be repurposed by a proposed reallocation mechanism needs to be a key consideration. USCC therefore believes the ACA Connects Coalition proposal has great potential, and believes that a growing number of interested parties will back this proposal given the significant record support for maximizing the amount of C-band spectrum repurposed for terrestrial wireless services.¹⁴ Commenters have underscored the direct correlation between maximizing the amount of repurposed spectrum and advancing the public interest. For instance, CCA explained how repurposing a substantial amount of C-band spectrum “will promote greater competition by increasing the likelihood of a number of licenses in the band.”¹⁵ In contrast, a failure to repurpose a significant amount of C-band spectrum “would represent a lost opportunity to repurpose spectrum that has been used inefficiently for years and to accelerate the transition to 5G.”¹⁶ USCC notes that the need to repurpose far more than 200 megahertz of C-band spectrum will become even greater if the

¹⁴ See, e.g., Reply Comments of T-Mobile USA, Inc. p. 7 (July 18, 2019) (“T-Mobile July 2019 Reply Comments”) (“There is broad support in the record that the Commission should make available as much C-band spectrum as possible for terrestrial use if it seeks to maintain its leadership in the race to 5G.”); Comments of Ericsson, p. 8 (Oct. 29, 2018) (“Ericsson NPRM Comments”) (urging the Commission “to ensure access to as substantial an amount of mid-band spectrum as is possible”); Reply Qualcomm Incorporated, p. 2 (Dec. 11, 2018) (“The FCC should continue to examine all means of opening up the full 500 MHz-wide band for flexible use because there is no other comparable block of mid-band spectrum available in the U.S.”); Comments of CTIA, p. 10 (Oct. 29, 2018) (“[T]he Commission should set an aggressive benchmark in the hundreds of megahertz so multiple licensees will have an opportunity to deliver on the full promise of 5G in the mid-band range.”); Comments of AT&T, p. 1 (July 3, 2019) (“AT&T July 2019 Comments”) (urging the Commission to “repurpose the C-Band from [FSS] to 5G mobile wireless service to the maximum extent possible”); Letter from Colby May, Communications Counsel, Trinity Broadcasting Network, and Ravi Potharlanka, CEO and Co-Founder, LPN Spectrum LLC, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122, p. 2 (May 16, 2019) (“TBN/LPN Ex Parte”) (urging the Commission to adopt a “clearance target of at least 300 MHz”); CCA NPRM Reply Comments at 6 (“Because of the important role that the C-Band can play for 4G and 5G services, the Commission should focus on clearing the maximum amount of C-Band spectrum possible for terrestrial services.”); Charter July 2019 Comments at 1 (urging the Commission “to maximize the amount of C-Band spectrum that is cleared for terrestrial use”).

¹⁵ Comments of Competitive Carriers Association, p. 6 (Oct. 29, 2018); see T-Mobile NPRM Comments at 12 (“Terrestrial providers require a sufficient amount of spectrum for multiple operators to offer competitive services to meet the demand for applications that consume ever-increasing amounts of data.”).

¹⁶ CCA NPRM Reply Comments at 2; see also TBN/LPN Ex Parte at 4 (“[O]nly about 21% of spectrum allocated (from a satellite-MHz perspective) for C-band authorizations in the United States is actually used.”).

Commission approves the proposed merger between T-Mobile and Sprint given that the combined company's spectrum holdings, and in particular its mid-band spectrum holdings, will be significantly larger than even those of Verizon and AT&T.

Commenters also have explained that, because “proceeds from the sale of C-band spectrum for 5G terrestrial use will likely far exceed the value associated with its current use,” the “more C-band spectrum that is reallocated, the greater the benefits will be for industry and the public alike.”¹⁷ And Charter recently noted that, by some estimates, “the United States is poised to create over one million jobs and gain almost \$274 billion in additional GDP if a substantial amount of this spectrum is made available for wireless broadband use.”¹⁸

The ACA Connects Coalition proposal would allow the Commission to repurpose such a significant amount of C-band spectrum because the backhaul of video to MVPD earth stations, which would be transitioned to fiber networks under the proposal, currently occupies “the vast majority of available bandwidth even as these users represent less than 15 percent of all registered earth stations.”¹⁹ Significantly, “ACA Connects estimates that the transition to fiber can be accomplished within eighteen months in urban areas, within three years in the majority of the remaining areas, and within five years for a few select areas.”²⁰ In other words, their proposed approach could clear the spectrum “as fast as the CBA plan in most areas, and in half the time in urban areas.”²¹

¹⁷ TBN/LPN Ex Parte at 5-6.

¹⁸ Charter July 2019 Comments at 2-3.

¹⁹ ACA Connects Coalition Ex Parte at 3.

²⁰ *Id.* at 4.

²¹ *Id.* at 2.

In addition to quickly repurposing a significant amount of C-band spectrum for terrestrial wireless operations, the ACA Connects Coalition proposal would “mak[e] all existing users of the spectrum whole”²² because “[a]ll costs related to the transition would be advanced ... from a fund that would be funded by the winning bidders.”²³ MVPDs and video programmers would be reimbursed for all costs associated with transitioning to fiber networks; space station operators would be reimbursed for any costs they incur in the transition; and resources would be made available to protect earth station registrants that continue to operate in the C-band “from out-of-band interference from 5G uses and other issues (including installing antenna filters; changing antennas’ frequencies; changing antennas’ polarization; and repointing antennas).”²⁴ In addition, given that an auction of flexible use licenses for C-band spectrum “is expected to generate proceeds well above the estimated transition cost,”²⁵ incumbents could receive compensation beyond their relocation costs – perhaps calculated as a percentage of auction revenues – in order to incentivize their cooperation in ensuring a smooth and timely transition. As Charter recently explained, “the Commission has authority under Title III of the Act to require such a payment even outside the context of an incentive auction in order to compensate incumbents for intangible or other costs related to relinquishing spectrum or for the value of their relinquished spectrum.”²⁶

The ACA Connects Coalition also explained how the transition to fiber will “provide a ‘futureproof’ delivery mechanism to MVPDs and video programmers as they offer 4K and 8K

²² *Id.* at 1

²³ *Id.* at 5.

²⁴ *Id.* at 4-5.

²⁵ *Id.* at 6; *see* TBN/LPN Ex Parte at 7 (noting that roughly \$26 billion likely would be generated from the private sale of only 200 megahertz of C-band spectrum).

²⁶ Charter July 2019 Comments at 10.

content.”²⁷ It also would promote – and fund – the deployment of new fiber facilities, particularly in rural areas. In addition to “helping to resolve the urban rural digital divide,”²⁸ these new fiber facilities would “accelerate the deployment of 5G small cells in less densely populated areas,” “enable smart grid and smart metering applications,” and “create around 100,000 ‘direct’ jobs and as many as another 100,000 ‘indirect’ jobs.”²⁹

Another benefit of the ACA Connects Coalition proposal is that it would “clear the spectrum on a nationwide basis,”³⁰ with “[e]qual amounts of spectrum cleared in urban and rural areas, to the extent technically feasible...”³¹ As ACA Connects recently explained, “[u]niform 5G refarming across the country would [] help ensure that rural consumers have the same opportunities to benefit from increased spectrum as urban users,”³² while “clearance of more spectrum in urban areas would severely damage rural America.”³³ It was for this reason that USCC previously opposed T-Mobile’s proposal to relocate incumbent earth stations currently located in urban areas to rural areas, and as a result, to establish different minimum clearing benchmarks for urban and rural areas.³⁴ As USCC explained at the time, because “protecting satellite receivers from harmful interference from [co-channel] terrestrial emissions will require

²⁷ ACA Connects Coalition Ex Parte at 3.

²⁸ ACA Connects July 2019 Comments at 2.

²⁹ ACA Connects July 2 Ex Parte at 8; *see* T-Mobile July 2019 Reply Comments at 8 (“Not only would the transition to fiber help close the digital divide, but it would also create other socioeconomic benefits, including increasing backhaul, enabling smart grid and smart metering applications, and facilitating job growth.”).

³⁰ ACA Connects July 2 Ex Parte at 4.

³¹ *Id.* at 2.

³² ACA Connects 2019 Comments at 13.

³³ *Id.* at 12.

³⁴ *See* T-Mobile NPRM Comments at 2.

large separation distances,”³⁵ moving incumbent earth stations to rural areas would result in far less spectrum being repurposed in rural areas than in urban areas.

Repurposing less spectrum in rural areas would be particularly ill-advised given the propagation characteristics of C-band spectrum. As Ericsson explained, because the “propagation characteristics in the mid-band provide for wide-area outdoor coverage,” networks deployed using mid-band spectrum “can use a smaller number of base stations aggregating traffic over larger areas...”³⁶ Consequently, mid-band spectrum will be crucial for ensuring 5G access for those residing in rural areas, where service providers’ return on investment is lower than in more densely-populated areas, and where small and regional carriers with limited budgets typically focus their deployment efforts. Commenters also have explained how repurposing a uniform amount of C-band spectrum on nationwide basis will facilitate the timely availability of a robust and affordable device ecosystem.³⁷

The ACA Coalition proposal also would “reserve for the American public a significant portion of the proceeds from the refarming of the spectrum.”³⁸ In contrast, T-Mobile has explained how, under CBA’s proposal, its members “would retain all proceeds from the sale of spectrum and U.S. taxpayers would get nothing – an outcome directly contrary to the Communications Act’s structure for making the public’s spectrum available.”³⁹

³⁵ *Id.* at 8.

³⁶ Ericsson NPRM Comments at 6.

³⁷ See Comments of AT&T Services, Inc., p. 7 (Oct. 29, 2018) (“[T]he overall amount of spectrum reallocated for terrestrial flexible use should [] be consistent across the CONUS so that equipment can be standardized and manufactured with economies of scope and scale.”); Ericsson Ex Parte at 4 (“To ensure success of 5G in mid-band spectrum from an eco-system and timeline perspective, the allocation of C-Band spectrum would need to be available on a nationwide basis.”).

³⁸ ACA Connects July 2 Ex Parte at 1.

³⁹ T-Mobile NPRM Comments at 3 (citing §309(j)).

B. Reliance on the Commission’s Broad Statutory Authority to Modify Licenses and Conduct Spectrum Auctions is the Best, and Perhaps the Only Feasible, Approach to Repurposing C-Band Spectrum

Under the ACA Connects Coalition proposal, the Commission either would: (a) “exercise its clear statutory authority to reallocate the C-band for terrestrial use and then award the resulting terrestrial licenses through a system of competitive bidding that satisfies the requirements of the Communications Act;”⁴⁰ or (b) rely on its “authority under Section 309(j)(8)(G) to provide incentives to incumbents to clear spectrum.”⁴¹ USCC prefers the former approach, which may be the only practical and legally-viable mechanism for repurposing a portion of the C-band for terrestrial wireless services.

Section 316 of the Communications Act “grants the Commission *broad power* to modify licenses,”⁴² including entire classes of licenses, provided that the Commission finds that the proposed modification “will promote the public interest, convenience, and necessity”⁴³ and will not make a “fundamental change” to the terms of the license(s).⁴⁴ Where, as here, these two conditions are satisfied, the license modification need not be consensual because Section 316 “provides the FCC with the authority to modify licenses without the approval of their holders.”⁴⁵

Given the importance of mid-band spectrum to next generation wireless networks and the current dearth of available mid-band spectrum in the United States, use of the Commission’s Section 316 authority to repurpose a portion of the C-band for terrestrial wireless services clearly

⁴⁰ ACA Connects July 2 Ex Parte at 5.

⁴¹ *Id.* at 6.

⁴² *California Metro Mobile Communications, Inc. v. FCC*, 365 F.3d 38, 45 (D.C. Cir. 2004) (emphasis added).

⁴³ 47 U.S.C. §316(a)(1).

⁴⁴ See *Cellco Partnership v. FCC*, 700 F.3d 534, 543-44 (D.C. Cir. 2012).

⁴⁵ *Rainbow Broadcasting v. FCC*, 949 F.2d 405, 410 (D.C. Cir. 1991); see *Peoples Broadcasting Co. v. U.S.*, 209 F.2d 286, 288 (D.C. Cir. 1953) (explaining that, “if modification of licenses were entirely dependent upon the wishes of existing licensees, a large part of the regulatory power of the Commission would be nullified”).

would promote the public interest, convenience, and necessity. These license modifications also would benefit the public because, in contrast to the reallocation mechanism proposed by CBA, a portion of the revenues from the resulting auction would be paid to the U.S. Treasury.

In addition, various commenters recently detailed why the license modifications required here would not “fundamentally change” the authorizations of C-band incumbents. For instance, T-Mobile noted that the Commission has expressly held that, under the “fundamental change” standard, a “licensee receiving a modified authorization need not receive the exact same rights as prior to the modification.”⁴⁶ In fact, the Commission may even “*reduce* a licensee’s rights when exercising its Section 316 authority to modify licenses, including by reducing the amount of spectrum on which the licensee may operate.”⁴⁷

More specifically, T-Mobile explained why the modifications to earth station operators’ registrations required to repurpose a portion of the C-band would not constitute fundamental changes. For instance, T-Mobile noted that, while “earth station operators are authorized to receive on all 500 megahertz of C-band spectrum,” they “only use a fraction of the available bandwidth.”⁴⁸ Consequently, “there would be no material impact” to an earth station’s operations if the Commission were to modify its registration “to reduce the amount of spectrum on which it could receive transmissions and claim interference protection.”⁴⁹ Similarly, because “fiber offers a comparable means of enabling earth station operators to maintain their same

⁴⁶ Letter from Russell H. Fox, Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., Counsel to T-Mobile USA, Inc., to Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122, p. 4 (Apr. 11, 2019) (“T-Mobile April 2019 Ex Parte”) (citing *Improving Public Safety Communications in the 800 MHz Band*, Report and Order, Fifth Report and Order, Fourth Memorandum Opinion and Order, and Order, 19 FCC Rcd 14969, ¶ 31 (2004)).

⁴⁷ *Id.* at 4 (emphasis in original) (citing *Establishing Rules and Policies for the use of Spectrum for Mobile Satellite Services in the Upper and Lower L-band*, Report and Order, 17 FCC Rcd 2704, ¶ 19 (2002)).

⁴⁸ Comments of T-Mobile USA, Inc. p. 8 (July 3, 2019) (“T-Mobile July 2019 Comments”).

⁴⁹ *Id.* at 8-9.

services in terms of throughput, reliability, and operating costs,”⁵⁰ an earth station that is transitioned to a fiber-based network “would still be able to operate as it does today.”⁵¹ The Open Technology Institute (“OTI”) went a step farther, contending that, “because receive-only earth stations receive their interference protection as a matter of discretion under the Commission’s Title I ancillary authority, they [] are not subject to the limitations on license modifications adopted under the agency’s Section 316 authority.”⁵² Regardless, “reducing the range of C-band frequencies in which earth stations are guaranteed interference protection would not represent a ‘fundamental change’ so long as the Commission protects their reliance interests by ensuring they can continue to receive transmissions on other channels.”⁵³

With respect to C-band satellite operators, T-Mobile believes the Commission likely would not even be required to exercise its license modification authority under Section 316. As T-Mobile explained, because “new, flexible-use terrestrial operations would not suffer harmful interference from downlink signals,”⁵⁴ satellite operators “may continue to transmit using all 500 megahertz of that spectrum...”⁵⁵ While OTI presumed that the Commission would need to exercise its license modification authority under Section 316 with respect to C-band satellite operators, OTI explained that “[r]educing the range of C-band frequencies in which space stations are guaranteed interference protection would not represent a ‘fundamental change’ in

⁵⁰ T-Mobile July 2019 Reply Comments at 9-10.

⁵¹ T-Mobile July 2019 Comments at 9.

⁵² Comments of the Open Technology Institute at New America, pp. 20 (July 3, 2019) (“OTI July 2019 Comments”).

⁵³ *Id.* at 21.

⁵⁴ T-Mobile July 2019 Comments at 3; *see* Comments of Competitive Carriers Association, p. 21 (July 3, 2019) (“CCA July 2019 Comments”) (“[T]ransmissions from distant geostationary earth orbit space stations will not impair the deployment of terrestrial mobile broadband networks.”).

⁵⁵ T-Mobile April 2019 Ex Parte at 8; *see* Comments of Verizon, p. 11 (July 3, 2019) (“C-Band space station operators have a right to interference protection from other space station operators, but no right to assert interference protection from co-primary terrestrial operations at an earth station receiver.”).

their rights, provided that satellite operators are able to continue operating essentially the same service...”⁵⁶ OTI further noted that “[c]hanging or reducing the frequencies used by a licensed service is a type of modification the Commission has ordered multiple times in the past and just recently proposed again as a means of clearing underutilized 900 MHz band spectrum for auction.”⁵⁷

Under this approach, after making the necessary license modifications pursuant to its broad Section 316 authority, the Commission would offer new flexible use licenses for the cleared C-band spectrum using a standard ascending clock auction format. Notably, there is significant record support for a traditional Commission-run auction, with numerous commenters touting the significant benefits associated with such auctions. For instance, CCA explained how “a Commission-led auction is more likely to employ procedures that will ensure competitive pricing, create fair opportunities for all interested parties to acquire spectrum, and generate revenues for the public benefit and the United States Treasury.”⁵⁸ Similarly, the Dynamic Spectrum Alliance emphasized how “[o]nly an FCC designed and supervised auction can ensure the sort of fair and policy-driven auction that Congress intended.”⁵⁹ And Charter described how “the transparency and fairness available only from the Commission will promote confidence in

⁵⁶ OTI July 2019 Comments at 21-22.

⁵⁷ *Id.* at 22 (citing *Establishing Rules and Policies for the use of Spectrum for Mobile Satellite Services in the Upper and Lower L-band*, Report and Order, 17 FCC Rcd 2704 (2002); *Improving Public Safety Communications in the 800 MHz Band et al.*, Report and Order, Fifth Report and Order, Fourth Memorandum Opinion and Order, and Order, 19 FCC Rcd 14969 (2004); *Review of the Commission’s Rules Governing the 896-901/935-940 MHz Band*, Notice of Proposed Rulemaking, 34 FCC Rcd 1550 (2019)).

⁵⁸ CCA NPRM Reply Comments at 2;

⁵⁹ Comments of Dynamic Spectrum Alliance, p. 9 (July 3, 2019) (“DSA July 2019 Comments”); *see* ACA Connects July 2 Ex Parte at 5-6 (stressing that the Commission’s auction process is “fair, open, and transparent, and ensures that decisions about this critical public spectrum resource are made in a way that maximizes the public good”).

the integrity of the auction process that in turn will promote more extensive participation in the auction.”⁶⁰

USCC stresses that, despite the difficulties associated with repurposing of portion of the C-band as a result of its licensing structure, the Commission should not, and in fact cannot, allow a group of incumbents to control this process. As CCA recently explained, the Flexible Use and Efficient Licensing (“FUEL”) auction design recently proposed by the CBA “does not satisfy the ‘competitive bidding’ requirements of Section 309(j)”⁶¹ because the Commission cannot comply with its statutory obligation “to design competitive bidding systems that fulfill congressionally defined objectives ... by sub-delegating its auction authority to third parties.”⁶² As CCA further explained, because “private parties are not bound by the same procedural and substantive standards that govern federal agencies, permitting an agency to delegate its authority to a private party would effectively shield the resulting licensing actions from meaningful review.”⁶³ Authorizing any sort of private sale of spectrum rights that a licensee does not currently possess also would “create dangerous precedent because incumbent licensees would always be

⁶⁰ Charter July 2019 Comments at 3; *see* Letter from Michael P. Goggin, AT&T, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122, p. 2 (July 16, 2019) (“AT&T Ex Parte”) (“The Commission’s auction process and algorithms are exhaustively documented, well-understood and administratively simple, encouraging broad participation by a variety of incumbents, new entrants, and designated entities.”).

⁶¹ CCA July 2019 Comments at 7; *see* OTI July 2019 Comments at 7 (“[T]he authorization of a private auction or private sale of C-band spectrum by incumbents would be an unlawful end-run around Section 309(j) of the Communications Act in clear contravention of Congressional intent and precedent.”); DSA July 2019 Comments at 4 (“[T]he CBA private auction proposal is bad policy and clearly violates Section 309(j) of the Communications Act.”).

⁶² CCA July 2019 Comments at 9; *see id.* at 7-8 (explaining that Section 309(j) “repeatedly requires that control over the design and implementation of the competitive bidding auction must remain with the Commission,” while “[n]othing in the statute suggests that the Commission may bestow these statutorily required functions upon a third party”); Reply Comments of Charter Communications, Inc., p. 8 (Dec. 11, 2018) (“Charter NPRM Reply Comments”) (“Congress gave auction authority to the Commission as means of discharging its basic statutory responsibility for assigning radio frequencies, and the Commission may not delegate this significant authority to a private entity.”).

⁶³ CCA July 2019 Comments at 25; *see* Charter NPRM Reply Comments at 8 (“[T]he Alliance ... is in effect proposing a privately-managed auction with none of the transparency or public accountability that should be part and parcel of such a major reallocation and distribution of critical spectrum resources.”).

incentivized to resist surrendering or sharing unused spectrum, unless the Commission agrees to give them all of the public revenue that would otherwise go to the U.S. Treasury and, by extension, American taxpayers.”⁶⁴

Moreover, even if the Commission could sub-delegate its auction authority to third parties, use of CBA’s FUEL auction design would be counter to the public interest safeguards included by Congress in Section 309 of the Communications Act. For instance, AT&T explained how the proposed FUEL auction design “would create enormous uncertainty, provide no price discovery, result in enormous burdens and complexity for bidders, invite strategic bidding, and lead to unpredictable and potentially unfair outcomes for bidders, as well as possibly resulting in a failed auction or unsold licenses.”⁶⁵ T-Mobile stressed how “the FUEL auction design is particularly problematic for smaller carriers.”⁶⁶ As Moise Advisory explained, the FUEL auction design’s “dual-class bidding system suggests unfairness in its definition and uses multiple methods to place small bidders at a decided disadvantage to their larger counterparts.”⁶⁷ In addition, CCA expressed deep skepticism with respect to the alleged benefits of CBA’s FUEL auction design, noting that “a novel combinatorial bidding procedure conducted by an untested player under a legally dubious regime seems highly unlikely to save either time or money compared to a congressionally authorized, Commission-led auction with a long and demonstrable history of timely moving spectrum resources to their highest and best use.”⁶⁸ For

⁶⁴ CCA July 2019 Comments at 11.

⁶⁵ AT&T Ex Parte at 1.

⁶⁶ Letter from Steve B. Sharkey, Vice President, Government Affairs, Technology and Engineering Policy, T-Mobile USA, Inc., to Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122, p. 5 (July 12, 2019).

⁶⁷ Letter from Edward D. Moise, Jr., Principal, Moise Advisory to Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122, p. 1 (July 1, 2019).

⁶⁸ CCA July 2019 Comments at 20.

these and other reasons, USCC agrees with AT&T that there is “no justification – much less any compelling justification – for departing from the uniform-price clock auction format that has become the standard for spectrum auctions conducted by the Commission.”⁶⁹

Numerous commenters have cautioned that the significant legal uncertainties associated with both CBA’s proposed private sale mechanism would result in “judicial appeals that could significantly delay the reallocation of this important block of much needed mid-band spectrum.”⁷⁰ In contrast, “the Commission has clear authority to rapidly authorize a traditional clock auction that consolidates FSS incumbents into the upper portion of the band, that requires auction winners to reimburse incumbents for any eligible and reasonable costs, and that modifies FSS space station licenses and earth station registrations accordingly.”⁷¹ Consequently, a “Commission-led reallocation process ... presents the least risk of delay due to litigation because it falls well within the Commission’s defined authority.”⁷²

III. A BAND PLAN CONSISTING OF 10 MHz BLOCKS WOULD PROVIDE NECESSARY FLEXIBILITY AND BEST PROMOTE COMPETITION

Regardless of the reallocation mechanism ultimately adopted for the C-band, USCC urges the Commission to license the MBX spectrum on the basis of 10 megahertz unpaired blocks to account for the uncertainty regarding the amount of C-band spectrum that will be

⁶⁹ AT&T Ex Parte at 6.

⁷⁰ AT&T July 2019 Comments at 2; *see* Charter July 2019 Comments at 3 (“[T]he litigation risks that arise from the CBA’s proposal are well-documented in the FCC record, and could delay deployment of 5G services for years.”); DSA July 2019 Comments at 4 (“The authorization of an opaque private auction and unnecessary windfalls seems very likely to lead to protracted legal challenges.”).

⁷¹ Letter from Michael Calabrese, Director, Wireless Future Project, Open Technology Institute/New America, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122, p. 1 (July 19, 2019); *see* DSA July 2019 Comments at 11 (“The most straightforward approach that is clearly within the Commission’s legal authority may be a forward auction that consolidates FSS incumbents into the upper portion of the band and requires auction winners (as a licensing condition) to reimburse incumbents for any eligible and reasonable costs.”).

⁷² Letter from Elizabeth Andron, Senior Vice President, Regulatory Affairs, Charter Communications, Inc., to Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122, p. 5 (Feb. 22, 2019).

repurposed for terrestrial flexible use operations, to promote competition in the wireless industry, and to provide flexibility to terrestrial licensees. Although USCC previously expressed its support for 20 megahertz blocks, 10 megahertz blocks simply will magnify the benefits of 20 megahertz blocks USCC previously discussed. In addition, 10 megahertz blocks will support an even greater number of channel sizes specified in the 3GPP standards for this frequency range.⁷³ At the same time, terrestrial service providers desiring additional bandwidth will be able to aggregate multiple 10 megahertz blocks, all of which would be guaranteed to be contiguous if the Commission offers flexible use licenses for the MBX spectrum via an ascending clock auction followed by an assignment phase.

Regardless of the amount of spectrum ultimately repurposed, it will be even more likely that the MBX spectrum will be equally divisible by 10 megahertz, rather than 20 megahertz, blocks. The Commission, therefore, would not be forced to adopt an MBX band plan consisting of blocks of varying size; nor would it be forced to divide the “remainder spectrum” (*i.e.*, the spectrum left over after creating the maximum number of similarly-sized blocks possible given the amount of MBX spectrum) among the full-size blocks, creating nonstandard size blocks incompatible with any of the channel sizes in the 3GPP specifications.

A band plan consisting of 10 megahertz blocks also will better ensure that multiple bidders have an opportunity to acquire licenses in each market. In contrast, depending on the amount of spectrum repurposed for terrestrial operations, larger blocks could result in only a few flexible use licenses being made available in each market, with the largest carriers likely acquiring these few licenses to the exclusion of small and regional carriers, who would be prevented from acquiring the mid-band spectrum rights they require to serve as a competitive

⁷³ 3GPP specifications allow for channel bandwidths of 10, 15, 20, 30, 40, 50, 60, 70, 80, 90 and 100 MHz in this frequency range. *See* 3GPP TS 38.101-1

counterbalance to the dominant nationwide carriers and to deploy 5G networks in the rural and other under-served areas they typically serve.

IV. PEA-BASED LICENSES WOULD PROMOTE COMPETITION AND RURAL DEPLOYMENTS, WHILE BENEFITTING CARRIERS OF ALL SIZES

Regardless of the reallocation mechanism ultimately adopted for the C-band, the Commission should license the MBX spectrum on the basis of Partial Economic Areas (“PEAs”) in order to provide small and regional carriers with a reasonable opportunity to acquire flexible use licenses for this spectrum. Although USCC previously supported licensing the MBX spectrum on the basis of Cellular Market Areas (“CMAs”), USCC’s continued experience in spectrum auctions for PEA-based licenses has caused it to increasingly agree with the Commission’s finding that PEAs “strike[] an appropriate balance between facilitating access to spectrum by both large and small providers and simplifying frequency coordination...”⁷⁴ Moreover, as a result of the 600 MHz and millimeter wave band auctions, the existing service areas of many small and regional carriers like USCC are increasingly aligning with the boundaries of PEAs, rather than CMAs. USCC also notes that the existing record in this proceeding weighs rather heavily in favor of PEA-based licenses.⁷⁵

V. THE COMMISSION SHOULD NOT PERMIT THE LARGEST SERVICE PROVIDERS TO MONOPOLIZE THE MBX SPECTRUM

USCC again urges the Commission to prohibit a single entity from acquiring more than one-third of the initial flexible use licenses made available for the MBX spectrum in a given market. CCA likewise has urged the Commission to “adopt an appropriate aggregation limit to

⁷⁴ *Use of Spectrum Bands Above 24 GHz For Mobile Radio Services*, Second Report and Order, Second Further Notice of Proposed Rulemaking, Order on Reconsideration, and Memorandum Opinion and Order, 32 FCC Rcd 10988, 11004 (2017).

⁷⁵ See T-Mobile NPRM Comments at 5; Nokia NPRM Comments at 11; Comments of Qualcomm Incorporated, p. 5 (Oct. 29, 2018).

curb the amount of spectrum one provider can purchase at auction.”⁷⁶ In addition, the ACA Connects Coalition recently urged the Commission to “implement an auction plan that promotes competition and broad participation by implementing mechanisms to limit how much spectrum any one provider can acquire at auction...”⁷⁷ USCC also again urges the Commission, when it subsequently evaluates proposed assignments or transfers of control of these licenses on the secondary market, to include the MBX spectrum in the screen it uses to identify markets that warrant further competitive analysis.

As the Commission previously noted in this proceeding, “[s]pectrum is an essential input for the provision of mobile wireless services...”⁷⁸ Absent adequate spectrum aggregation policies, however, the largest carriers will have both the means and motivation to prevent small and regional carriers from acquiring the MBX spectrum they need to serve as a competitive counter-balance and to ensure that those living in rural and other underserved areas also have an opportunity to benefit from innovative 5G services. Conversely, CCA described how “policies that demarcate smart aggregation limits for purchase of spectrum at auction could maximize participation by a variety of entities eager to invest in next-generation deployments.”⁷⁹ In other words, adequate spectrum aggregation policies are needed in order to sufficiently promote both competition and the efficient use of this spectrum, as well as to prevent an excessive concentration of this spectrum in the hands of a few already-dominant carriers.⁸⁰ The

⁷⁶ CCA NPRM Reply Comments at 11; *see id.* (describing USCC’s proposed one-third aggregation limit as “an appropriate spectrum screen that incorporates C-Band spectrum”).

⁷⁷ ACA Connects July 2 Ex Parte at 8.

⁷⁸ *C-Band NPRM*, 33 FCC Rcd at 6963.

⁷⁹ CCA NPRM Reply Comments at 11.

⁸⁰ *See Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 8014, 8081 (2016) (“[M]obile spectrum holdings policies [] will promote competition in the future, including competition in the development of 5G services, as well as promote the efficient use of mmW spectrum, and avoid an excessive concentration of licenses.”).

Communications Act, therefore, mandates the adoption of USCC’s proposed safeguards.⁸¹ If the Commission approves the proposed merger between T-Mobile and Sprint, a significant portion of the available mid-band spectrum already will be held by a single company, making the adoption of reasonable spectrum aggregation limits even more important to advancing the public interest by ensuring other service providers have an opportunity to acquire the mid-spectrum they will need to successfully compete in the 5G marketplace.

VI. CONCLUSION

For the reasons set forth above, in order to maximize the amount of spectrum in the 3.7-4.2 GHz band repurposed for terrestrial flexible use operations and to ensure small and regional carriers have an opportunity to acquire flexible use licenses for this spectrum – and thus, have an opportunity to deploy next generation wireless networks in the rural areas they serve and to act as a competitive check on the dominant nationwide carriers – the Commission should use its broad statutory authority to repurpose a significant amount of C-band spectrum, make new flexible use licenses available via a standard ascending clock auction, adopt an MBX band plan consisting of 10 megahertz blocks, license the MBX spectrum on the basis of Partial Economic Areas, and prohibit a single entity from acquiring more than one-third of the initial flexible use licenses made available for the MBX spectrum.

⁸¹ See CCA NPRM Reply Comments at 11 (“The Communications Act requires the Commission to examine closely the impact of spectrum aggregation on competition, innovation, and the efficient use of spectrum to ensure that spectrum is assigned in a manner that serves the public interest, convenience, and necessity.”).

Respectfully submitted,

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